

Claims

1. A keypad consisting of plural buttons for user to input characters manually,
comprising:

a first button to a twelfth button being arranged in 3x4 array, a first character set
5 comprising characters of high frequency, being assigned to at least one of said first
button to said twelfth button as a first character;

a second character set comprising characters of middle frequency, being
assigned to at least one of said first button to said twelfth button as a second character;
and

10 a third character set comprising characters of low frequency, being assigned to
at least one of said first button to said twelfth button as a third character,

wherein the character included within said first character set is selected by
pushing a single key and the character included within said second character set and
said third character set are selected by a predetermined input method,

15 wherein said first character set to said third character set are assigned to one of
said first button to said twelfth button in consideration of inputting characters by both
hands.

2. The keypad as stated in claim 1, wherein said first character set comprises E
20 T A O I N S R H space.

3. The keypad as stated in claim 2, wherein said first character set to said third character set are assigned as follows:

5 button 1{E W Q} button 2{T F Y} button 3{O P ※}
 button 4{A D Z} button 5{R G V} button 6{I L J}
 button 7{S C X} button 8{H U B} button 9{N M K}
 button 11{※※※} button 10{space※※} button 12{※※※}

where, ※ indicates that no character is assigned to that position.

10 4. The keypad as stated in claim 1, wherein said first character set comprises

○ | † ⊥ ⊏ ≡ † — ⊥ ˆ.

5. The keypad as stated in claim 4, wherein said first character set to said third character set are assigned as follows:

15 button 1{⊏ □ ⊏} button 2{ˆ ˆ ⊏} button 3{† † ※}
 button 4{⊥ ⊂ ⊔} button 5{○ ≡ ≡} button 6{| ⊏ π}
 button 7{≡ ⊂ ≡} button 8{⊥ ˆ π} button 9{† ⊥ †}
 button 11{※※※} button 10{— ˆ ˆ} button 12{※※※}

where, ※ indicates that no character is assigned to that position.

6. The keypad as stated in claim 1, wherein said first character set comprises ! ?

- ' " ; : , . @ .

7. The keypad as stated in claim 6, wherein said first character set to said third

5 character set are assigned as follows:

button 1{! / \}	button 2{? ~ `}	button 3{- + }
button 4{' < [}	button 5{" = _}	button 6{@ ({ }
button 7{; >]}	button 8{: & \$}	button 9{,) }}
button 11{^ * ※}	button 10{. ※ ※}	button 12{% # ※}

10 where, ※ indicates that no character is assigned to that position.

8. The keypad as stated in claim 1, wherein the predetermined input method is one selected from the group consisting of a multitap method(M1), an enhanced multitap method(M2), a dual shift method(D), a hybrid method(H1, H2), a long-short button method(F1, F2) and PDA method with stylus pen(P1, P2).

15

9. A method for inputting characters by selecting one among a first characters to a third characters on a 3x4 arrayed keypad in which at least one of the first characters to the third characters is assigned to at least one of a first button to a twelfth button, respectively and the eleventh button and the twelfth button work as a left shift key and a

20

right shift key respectively, comprising:

detecting that one among twelve buttons is pushed;

determining whether or not one of a left shift flag and a right shift flag is set;

outputting the second character or the third character of the pushed button on
5 the basis of a predetermined rule if one of the left shift flag and the right shift flag is set;

determining whether or not the pushed button is one of the left shift key and the
right shift key if none of the left shift flag and the right shift flag is set;

setting one of the left shift flag and the right shift flag if the pushed button is
one of the left shift key and the right shift key; and

10 outputting the first character of the pushed button if the pushed button is none
of the left shift key and the right shift key.

10. A method for inputting character by selecting one among a first characters
to a third characters on a 3x4 arrayed keypad in which at least one of the first characters
15 to the third characters is assigned to at least one of a first button to a twelfth button
respectively and the eleventh button and the twelfth button work as a shift key,
comprising:

determining a long push or a short push when one among twelve buttons is
pushed;

20 determining whether or not a shift flag corresponding to the shift keys is set;

outputting the second character or the third character of the pushed button on the basis of a predetermined rule if the shift flag is set;

determining whether or not the pushed button is the shift key if the shift flag is not set;

5 setting the shift flag if the pushed button is the shift key; and

outputting one corresponding to the long push or the short push among the first character to the third character of the pushed button on the basis of the predetermined rule if the pushed button is not the shift key.

10 11. The method as stated in claim 10, wherein determining a long push or a short push on detecting a pushed button comprises:

operating a timer with a predetermined threshold value when the button is pushed;

determining as the short push after resetting the timer if the button is released
15 before the timer is expired; and

determining as the long push if the timer is expired.

12. The method as stated in claim 11, wherein the threshold value is adjustable.

20 13. The method as stated in claim 10, wherein the shift keys comprise a left

shift key and a right shift key that are distinguishable from each other.

14. A method for inputting characters by selecting one among a first characters to a third characters assigned to one of a first button to a twelfth button by a number of

5 button push, comprising:

determining a long push or a short push when one among twelve buttons is pushed;

outputting one among the first character to the third character corresponding to the number of button push in the case of the short push;

10 determining whether or not the former button being pushed just prior to the long-pushed button is same as the long-pushed button in the case of the long push;

separating the long-pushed button from the former button by inserting a separator if they are same; and

separating the long-pushed button from the former button by inserting a space if
15 they are not same.

15. A method for inputting characters by selecting one among a first characters to a third characters on a 3x4 arrayed keypad in which at least one of the first characters to the third characters is assigned to at least one of a first button to a twelfth button,

20 comprising:

determining a direction of a line longer than a predetermined length when one among twelve buttons is pushed;

outputting the second character or the third character of the pushed button corresponding to the line direction on the basis of a predetermined rule;

5 determining a long push or a short push if no line direction exists on the selected button; and

outputting one corresponding to the long push or the short push among the first character to the third character of the pushed button on the basis of the predetermined rule.

10

16. The method as stated in claim 15, wherein a fourth character is further assigned to the keypad and is selected by the line direction.

17. A method for inputting characters by selecting one among a first characters
15 to a third characters on a 3x4 arrayed keypad in which at least one of the first characters to the third characters is assigned to at least one among a first button to a twelfth button, comprising:

determining a long push or a short push when one among twelve buttons is pushed;

20 outputting one corresponding to the long push from the second character and

the third character of the pushed button on the basis of the predetermined rule in the case of long push;

determining whether or not the button is successively pushed in the case of short push;

5 outputting one corresponding to the successive push from the second character and the third character of the pushed button on the basis of the predetermined rule in the case of the successive push; and

outputting the first character of the pushed button if the button is not successively pushed.

10

18. A method for inputting a second character in a first mode without changing mode on a 3x4 arrayed keypad where a first character that can be inputted in the first mode and the second character that can be inputted in a second mode are assigned to, comprising:

15 detecting a first button input in the first mode, wherein the first button input is one selected from a group consisting of a shift key, a long push, a short push and combination of them, wherein the shift key is one selected from a group consisting of button * and button # on the keypad;

detecting a second button input in the first mode, wherein the second button
20 input is one selected from a group consisting of a successive push, a long push, a short

push and combination of them; and

outputting the second character that is predetermined according to the combination of the first button input and the second button input,

wherein the selectable combination of the first button input and the second
5 button input is assigned in the first mode.

19. The method as stated in claim 18, wherein the combination of the first
button input and the second button input is one selected from the group consisting of *
b, * bb, * bbb and * b~.

10

20. The method as stated in claim 18, wherein the combination of the first
button input and the second button input is one selected from the group consisting of
#b~, * b~, #~b- and * ~b-.

15 21. The method as stated in claim 18, wherein the second character is one
selected from the group consisting of symbols, numeral letters and capital letters of
English alphabets.

22. A device for inputting character, comprising:
20 a keypad, in which a first button to a twelfth button are arrayed in 3x4 matrix,

at least one among a first character to a third character is assigned to one among the first button to the twelfth button, and the eleventh button and the twelfth button work as a shift key;

an input processor for detecting which button is pushed and determining a long
5 push or short push of the detected button;

a button processor for selecting one corresponding to the long-pushed button or the short-pushed button among the first character to the third character by checking a shift flag's state corresponding to the shift key; and

a memory for working as the shift flag that is set or reset by said button
10 processor and storing the first characters to the third characters that are assigned to said each button.

23. The device as stated in claim 22 further comprising a touch screen for displaying the character selected by said button processor, wherein said keypad is
15 displayed on said touch screen.